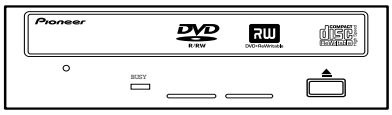
Pioneer sound.vision.soul

Service Manual



DVR-A06

ORDER NO.
RRV2828

DVD-R/RW CD-R/RW WRITER

DVR-A06

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
DVR-A06	KBXV	DC Power supply from other system	

NECESSARY INFORMATION FOR DHHS RULES MARKED ON THE TOP COVER BELOW:

DANGER-VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.

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ⓒ**PIONEER CORPORATION 2003**

T-ZZY NOV. 2003 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

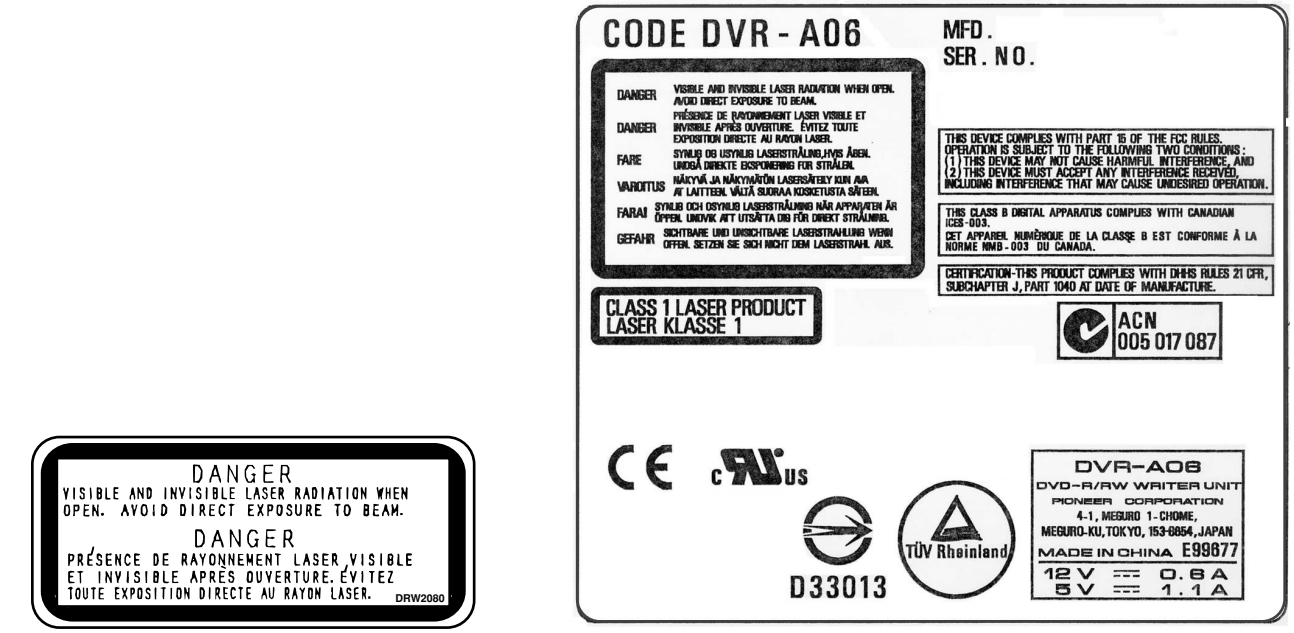
WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

IMPORTANT
THIS PIONEER APPARATUS CONTAINS INVISIBLE LASER OF CLASS 3b and VISIBLE LASER OF CLASS 2.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 25 mW
WAVELENGTH: 654 - 662 nm

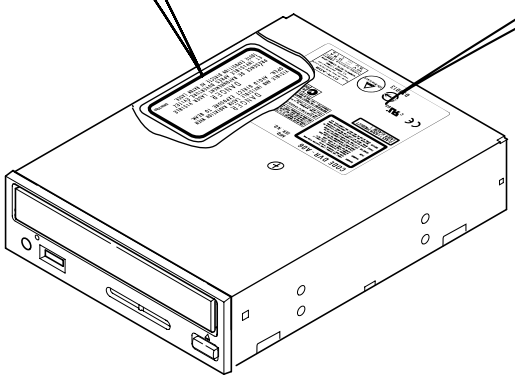
LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 36 mW
WAVELENGTH: 780 - 787 nm


CODE DVR-A06
MFD.
SER. NO.
DANGER
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
DANGER
PRÉSENCE DE RAYONNEMENT LASER VISIBLE ET INVISIBLE APRÈS OUVERTURE. ÉVITEZ TOUTE EXPOSITION DIRECTE AU RAYON LASER.
FARE
SYNLIG OG USYNLIG LASERSTRÅLING, HVIS ÅBEN. UNDGÅ DIREKTE EKSPONERING FOR STRÅLEN.
VAROITUS
NÄKYVÄ JA NÄKYMÄTÖN LASERSÄTELY KUN AVA AT LAITTEEN. VÄLTÄ SUORAA KOSKETUSTA SÄTEEN.
FARA!
SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR APPARATEN ÄR ÖPPEN. UNDVIK ATT UTSÄTTA DIG FÖR DIREKT STRÅLNING.
GEFAHR
SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN OFFEN. SETZEN SIE SICH NICHT DEM LASERSTRAHL AUS.
CLASS 1 LASER PRODUCT
LASER KLASSE 1
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
THIS CLASS B DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.
CET APPAREIL NUMÉRIQUE DE LA CLASSE B EST CONFORME À LA NORME NMB-003 DU CANADA.
CERTIFICATION-THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR, SUBCHAPTER J, PART 1040 AT DATE OF MANUFACTURE.
ACN
005 017 087
D33013
DVR-A06
DVD-R/RW WRITER UNIT
PIONEER CORPORATION
4-1, MEGURO 1-CHOME,
MEGURO-KU, TOKYO, 153-6654, JAPAN
MADE IN CHINA E99677
12V ⎓ 0.6A
5V ⎓ 1.1A

DANGER
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
DANGER
PRÉSENCE DE RAYONNEMENT LASER VISIBLE ET INVISIBLE APRÈS OUVERTURE. ÉVITEZ TOUTE EXPOSITION DIRECTE AU RAYON LASER.
DRW2080

(DRW2080)

(DRW2184)



[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

1. SPECIFICATIONS

[DVR-A06/ KBXV]

[Setting]

This drive is Horizontal and Vertical Use.

[Disc Size]

- 12 cm (4.72") / 8 cm (3.15")*

  *8 cm (3.15") discs cannot be used at upright position.

[Data Transfer Rate]

Data Read (Sustained)	
DVD	Max. 16.62MBytes/sec.
CD	Max. 4.92MBytes/sec. (13.7 - 32X CAV Mode over 16 block transfer)
Data Write (Sustained)	
DVD	Ave. 5.54 MBytes/sec. (4X DVD-R)
CD	Ave. 2.46 MBytes/sec. (16X CD-R)
Host Interface specification	
PIO Mode 4, Multi word DMA Mode 2	16.6 Mbytes/sec.
Ultra DMA mode 2	33.3 MBytes/sec.

- The data transfer rate may not be output due to disc conditions (scratches, etc.).

[Access Time/ Seek Time]

Access time (Random average)	
	DVD-ROM 140 ms CD-ROM 130 ms
Seek time (Random average)	
	DVD-ROM 120 ms CD-ROM 100 ms

[Audio Characteristic]

Line Out	0.7 ± 0.1 Vrms (at 10 kΩ load)

[Others]

Power Supply	DC +12 V, 0.6 A
	DC +5 V, 1.1 A
Dimensions	148 (W) x 42.3 (H) x 198 (D) mm
(including front panel)	5-27/32 (W) x 1-11/16 (H) x 7-25/32 (D) in.
Weight	1.1 kg (2.43 lb)
Operation temperature	+5°C to +45°C (41°F to 113°F)
Operation humidity	5% to 85% (no condensation)
Storage temperature	– 40°C to +60°C (– 40°F to 140°F)
Storage humidity	5% to 90% (no condensation)

[Accessories]

Short-circuit socket	x1
Audio cable	x1
Mounting screw	x4
Operating instructions	x1

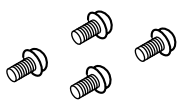
NOTE:

- *Specifications and design subject to possible modifications without notice, due to improvements.*

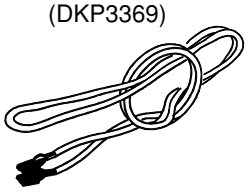
Accessories

Short-circuit socket x1
(DKX1046)

Mounting screw x4
(PMB30P060FMC)



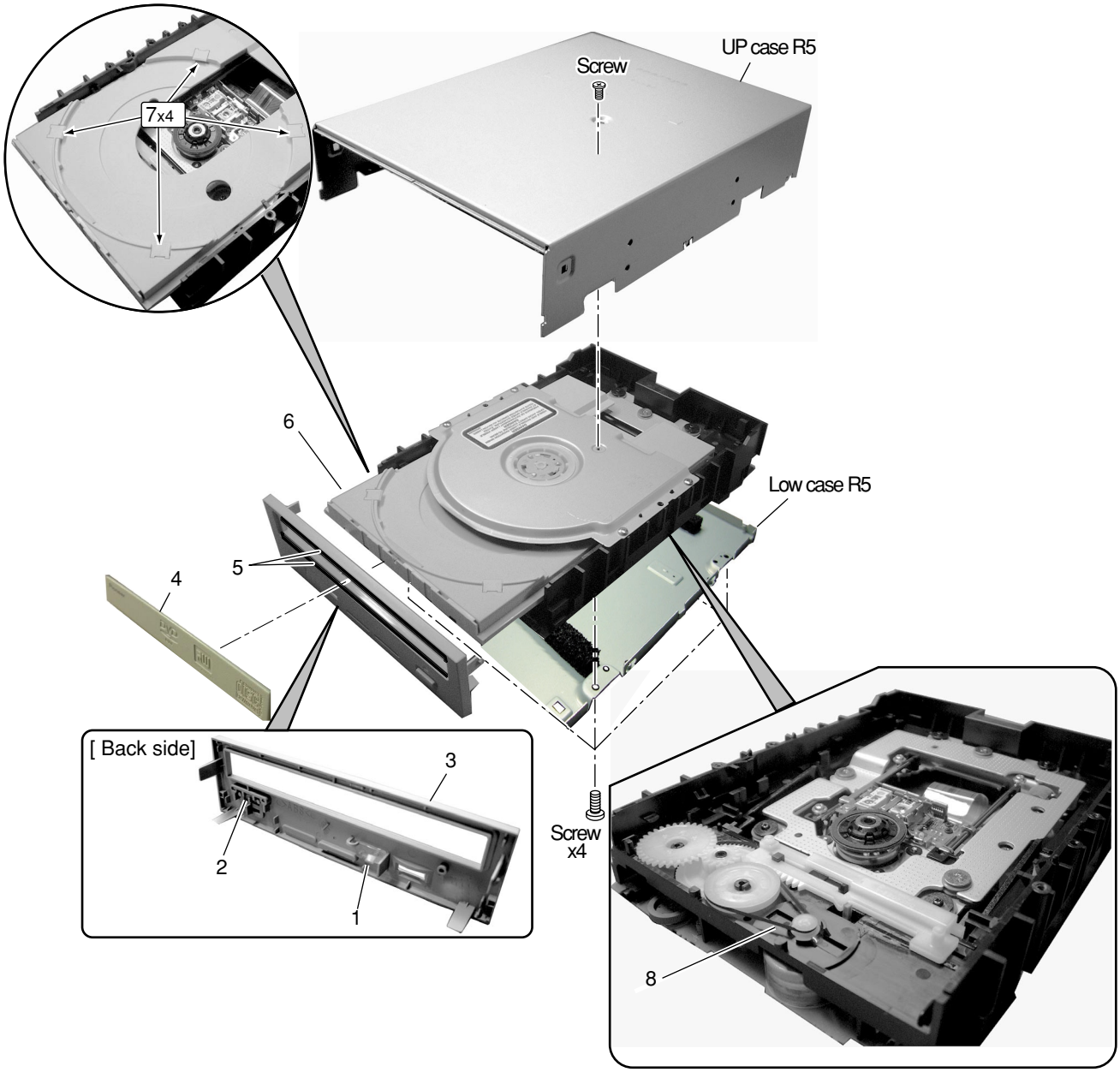
Audio cable x1
(DKP3369)



2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 EXTERIOR SECTION



EXTER parts List

Mark	No.	Description	Part No.
	1	Lens R5	DAC2148
	2	Key Eject R5	DAC2057
	3	Front Bezel	DAH2141
	4	Cover	DAH2230
	5	Panel Sheet R6	DEB1614
	6	Tray R5	DNK4075
	7	Nail R5	DNK4076
	8	Belt R5	DEB1542

3. GENERAL INFORMATION

3.1 DIAGNOSIS

3.1.1 EMERGENCY DISC REMOVAL

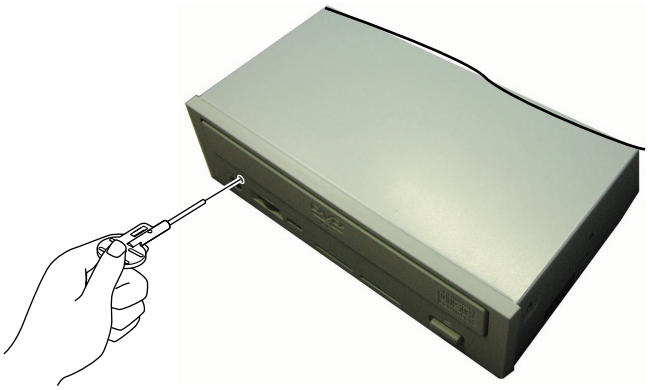
■ Emergency Disc Removal

In the following cases, discs can be ejected using the emergency ejection hole.

• Trouble with the device makes it impossible to remove the disc using the OPEN/CLOSE button or a software command.

• A disc that you need to eject remains inside the device but the power is off.

1. Confirm that the power for the device is OFF and that the disc has stopped spinning.
2. Insert the accompanying pin for emergency ejection straight into the emergency ejection hole and press firmly.



3. Pull it out as far as you need to and remove the disc. (The disc tray will open about 5 to 10 mm.)

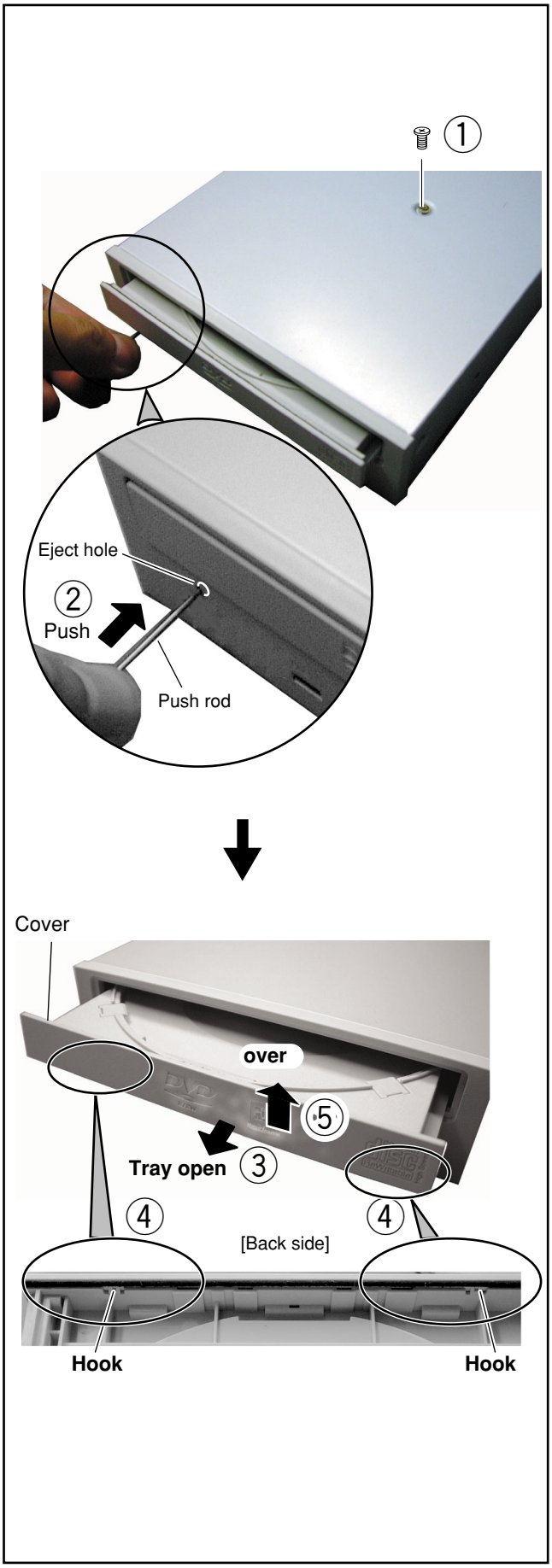
Notes:

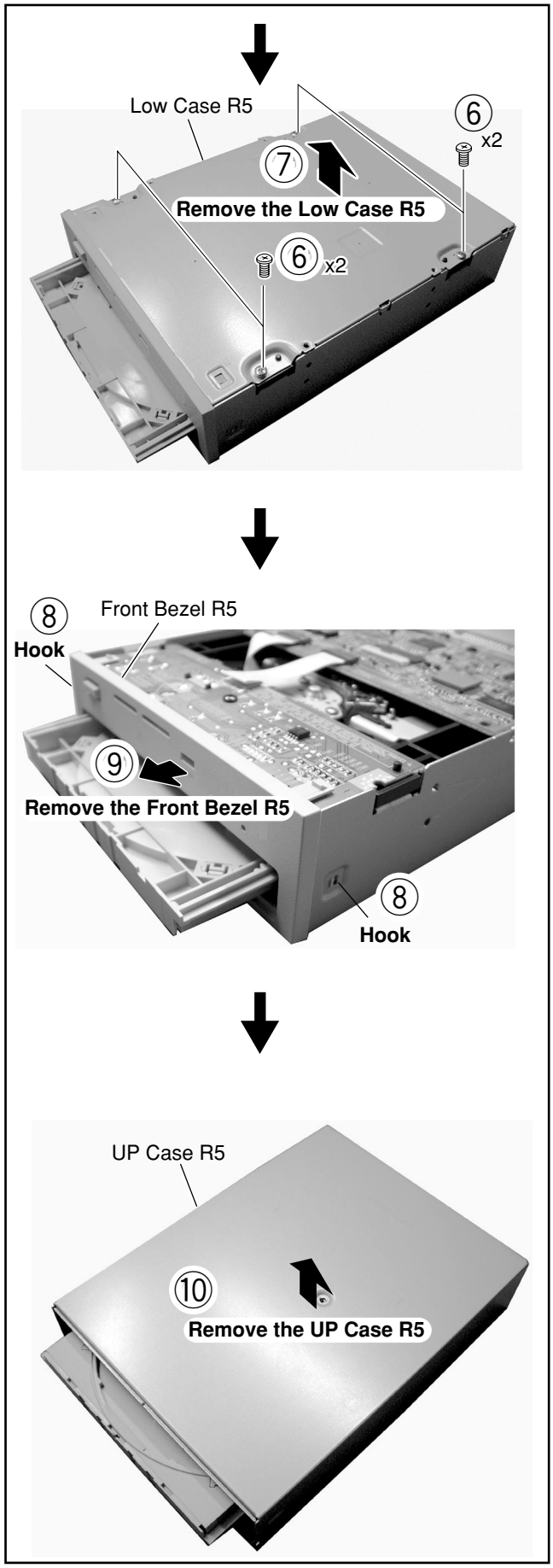
• Make sure to use only the accompanying pin for emergency ejection. (No other object should be inserted.)

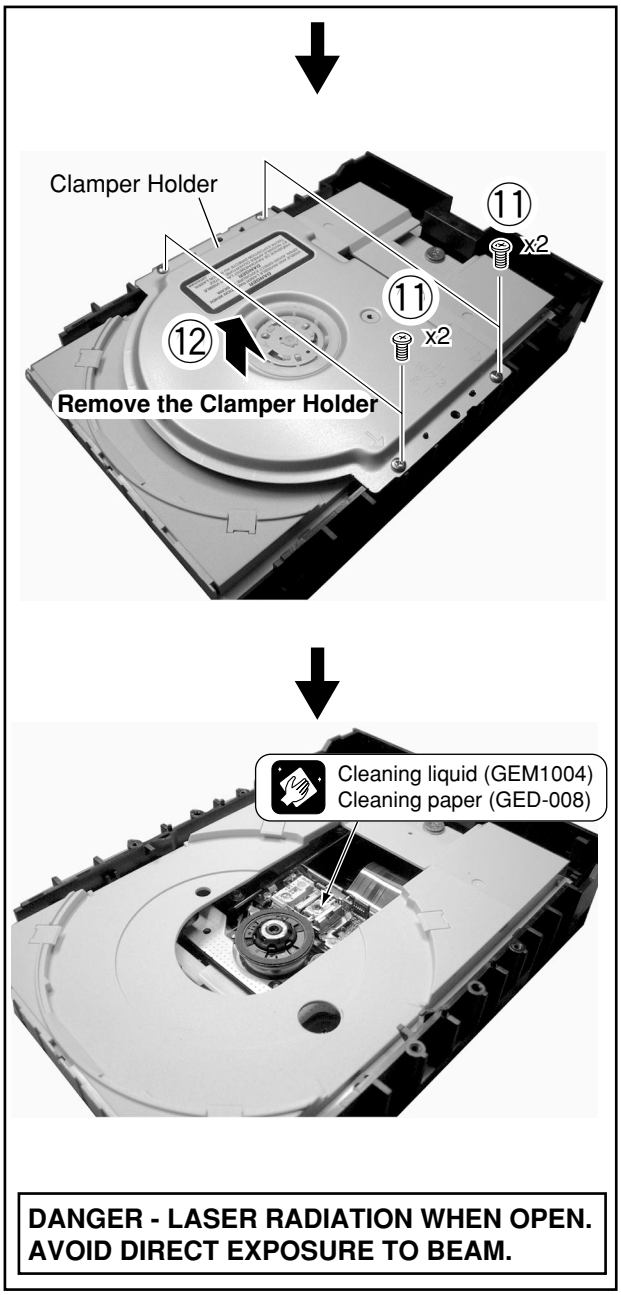
• Never attempt to forcibly eject a disc that is still rotating, as doing so could result in injury personal or in damage to the disc.

• Do not place items within 12 cm of the front of this device, as doing so could obstruct the disc ejection operation.

3.1.2 PICKUP LENS CLEANING







DANGER - LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.

3.1.3 CLEANING

[NOTES ON SERVICING]

■ CLEANING

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup leneses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

3.1.4 INSPECTION (FAULT ANALYSIS PROGRAM) METHOD

Caution: Please use in the Real MS-DOS mode. (The program does not work in the MS-DOS prompt (DOS window) of the Windows.)

- **Discs to be used**

CD-ROM	: GGV1054
DVD-ROM (Single)	: GGV1035
DVD-ROM (Dual)	: GGV1036
CD-R	: GGX1011
CD-RW	: GGV1088
DVD-R	: GGV1049
DVD-RW	: GGV1050
DVD+R	: RICHO
DVD+RW	: RICHO

- **Inspection program disc**

FA Program Disc: GGS1049

- **Installation method**

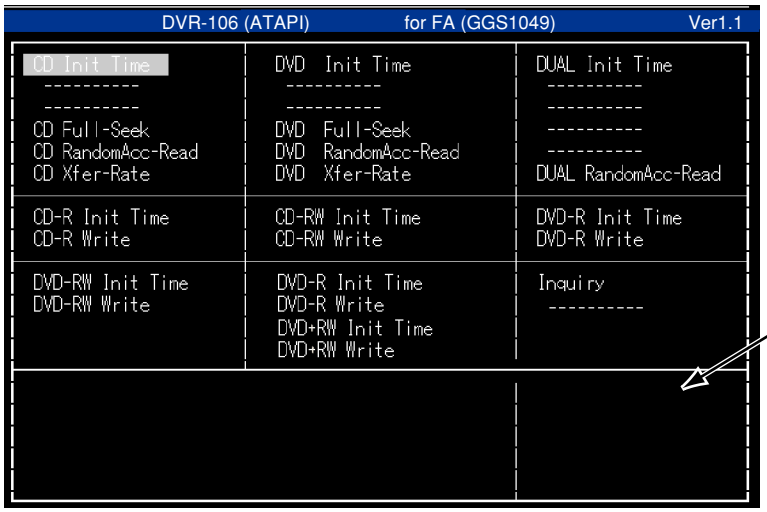
1. Copy the program file "R6a_fa.exe" .

- **Execution method**

1. Start the PC in the MS-DOS mode.
2. Move to the directory to which the program file has been copied.
   Example: CD DVR106 [enter] (For "C:\DVR106")
3. Execute the program.
   r6a_fa /sv [enter] : (in case of the Japanese environment)
   r6a_fa /e /sv [enter] : (in case of the English environment)
   (In case of English environment, it is difficult to see the frame line if command "/e" is not added.)

Operation	Key Operation
To move the window	Right or left cursor keys
To select the measurement item	Up or down cursor keys
To execute the measurement	Enter key
To execute all items continuously	Space key
To quit the program	Esc key
To format CD-RW (full)	F or f key
To format DVD-RW (quickl)	G or g key
To format DVD+RW (Basic)	M or m key

- **Start-up screen**



3.1.5 MEASUREMENT METHOD OF THE LASER DIODE DETERIORATION RATE

• Inspection program disc

Deterioration rate measurement tool for LDs of the DVR-106: ldchk110.exe (LD Checker version 1.10) : GGS1035

• Description

This tool checks to what degree the LDs for CD and DVD of the DVR-106 drive have been deteriorated after shipment.

• Operating environment

Real MS-DOS

• Installation method

Copy the executable file "ldchk110.exe" to an appropriate directory.

• Execution method

1. Start the PC in the MS-DOS mode.
2. Move to the directory to which the program file has been copied.
   Example: CD DVR106 [enter] (For "C: \ DVR106")
3. Execute the program.
   ldchk110.exe [enter]

• How to use

When the program is executed, the port where DVR-105 is connected is automatically searched, and the deterioration information of LDs for CD and DVD is displayed. Then the program is finished.

• Meaning of the deterioration information

The following is displayed on the screen.
target drive = Secondary Master [Displaying the deterioration information of the drive which is connected to the Secondary MASTER.]

CD LD Deterioration Rate(non Temp Correction) =109 [(Present CD LD current value/CD LD current value during adjustment) × 100 : without temperature correction]

DVD LD Deterioration Rate(non Temp Correction) =103 [(Present DVD LD current value/DVD LD current value during adjustment) × 100: without temperature correction]

Current Temperature =153 [Present LD ambient temperature 4/°C]

Initial Temperature =112 [LD ambient temperature during adjustment 4/°C]

```
- - - - - - - - - - - - CD LD - - - - - - - - - - - -
deterioration rate      = 3.7%          [Deterioration rate of CD LD (The value after the temperature correction)]
************************************
** CD LD Judgement ??: Error Level 0 **   [Judgment of OK/NG: Deterioration level of CD LD = 0]
************************************
- - - - - - - - - - - - DVD LD - - - - - - - - - - - -
deterioration rate      = -4.8%         [Deterioration rate of DVD LD (The value after the temperature correction)]
************************************
**DVD LD Judgement ??:Error Level 0 **   [Judgment of OK/NG: Deterioration level of DVD LD = 0]
************************************
```

∗ Both LDs of CD and DVD are judged to be NG when the [deterioration rate] becomes 10% or more, or -10% or less.
[Error Level] is calculated by dividing [deterioration rate] by 10 and by omitting decimals.
Therefore the LDs are judged to be NG when [Error Level] becomes 1 or more, or -1 or less.

• About temperature correction

When the temperature changes by 10 degrees, the current value which flows to LD increases as follows, even if LDs are not deteriorated at all: at CD: 5%, at DVD: 8%
Considering this, the value adjusted by the temperature correction in the following calculation is displayed as the final deterioration rate.
CD LD deterioration rate (without temperature correction) / {1 + ((Present LD ambient temperature (°C) - LD ambient temperature during adjustment (°C)) /10) × 0.05}
DVD LD deterioration rate (without temperature correction) / {1 + ((Present LD ambient temperature) (°C) - LD ambient temperature during adjustment (°C)) /10) × 0.08}

From the above equation, you can see that the deterioration rate without the temperature correction is adopted as it is, if there is no difference between present LD ambient temperature and LD ambient temperature during the adjustment. And the greater the difference, the greater the correction will be.

• When an abnormal value was displayed as the deterioration rate

Please contact us. In such a case, inform us of the following four values.
CD LD Deterioration Rate(without Temp Correction)
DVD LD Deterioration Rate(without Temp Correction)
Current Temperature
Initial Temperature

• Cautions

- In case of DVR-106, when the disc is in the tray automatically opens, and LD deterioration inspection is performed.
- This tool is designed on the assumption that only one DVR-106 drive is connected to the PC.
  It is not possible to choose the drive on the users side, even if two or more DVR-106 drives are connected.